



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/707,664

12/31/2003

Ivan Yang-En Wu

7635-US-PA

1663

31561

7590

11/04/2005

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE

7 FLOOR-1, NO. 100

ROOSEVELT ROAD, SECTION 2

TAIPEI, 100

TAIWAN

EXAMINER

CHOWDHURY, TARIFUR RASHID

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 11/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/707,664	Applicant(s) WU ET AL.	
	Examiner Tarifur R. Chowdhury	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12, 14-18 and 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-12, 14-18 and 20 is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 15 is objected to because of the following informalities:

In claims 15, line 6, "the second transparent, there are a bumpy layer" should be changed to --the second transparent electrode, there is a bumpy layer--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2871

4. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al., (Wang), USPAT 6,714,268 in view of Muruyama et al., (Muruyama), US 2002/0149320.

5. Wang discloses and shows in Fig. 4, a dual mode liquid crystal display device, comprising:

- an upper substrate (311);
- a lower substrate (321) comprising a first thin film transistor (T3), a second thin film transistor (T2), an electrode (345) connected to the first thin film transistor (T3), and a regional light-emitting source (combination of layers 339 (anode), 341 (OLED material) and 343(cathode)) connected to the second thin film transistor (T2); and
- a liquid crystal layer (315) between the upper substrate and the lower substrate.

Wang also discloses and shows in Fig. 4 that the light-emitting diode further includes:

- a cathode (343) on the lower substrate;
- a light-emitting layer (341) on the cathode; and
- a second transparent electrode (339) on the light-emitting layer , wherein the second electrode serves as an anode.

Wang further shows that a reflective layer (412) is formed on the lower substrate (321).

Wang differs from the claimed invention because he does not explicitly disclose

Art Unit: 2871

that the electrode layer (345) is reflective. However, it is common and known in the art to reduce extra layers and thus obtain a compact and thin device that is lightweight and cheap to manufacture. Further, using a reflective electrode instead of a combination of a reflective layer and an electrode is also common and known. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the display device of Wang by eliminating the reflective layer and using a reflective electrode instead of the electrode (345) in order to obtain a compact device that is thin and light weight.

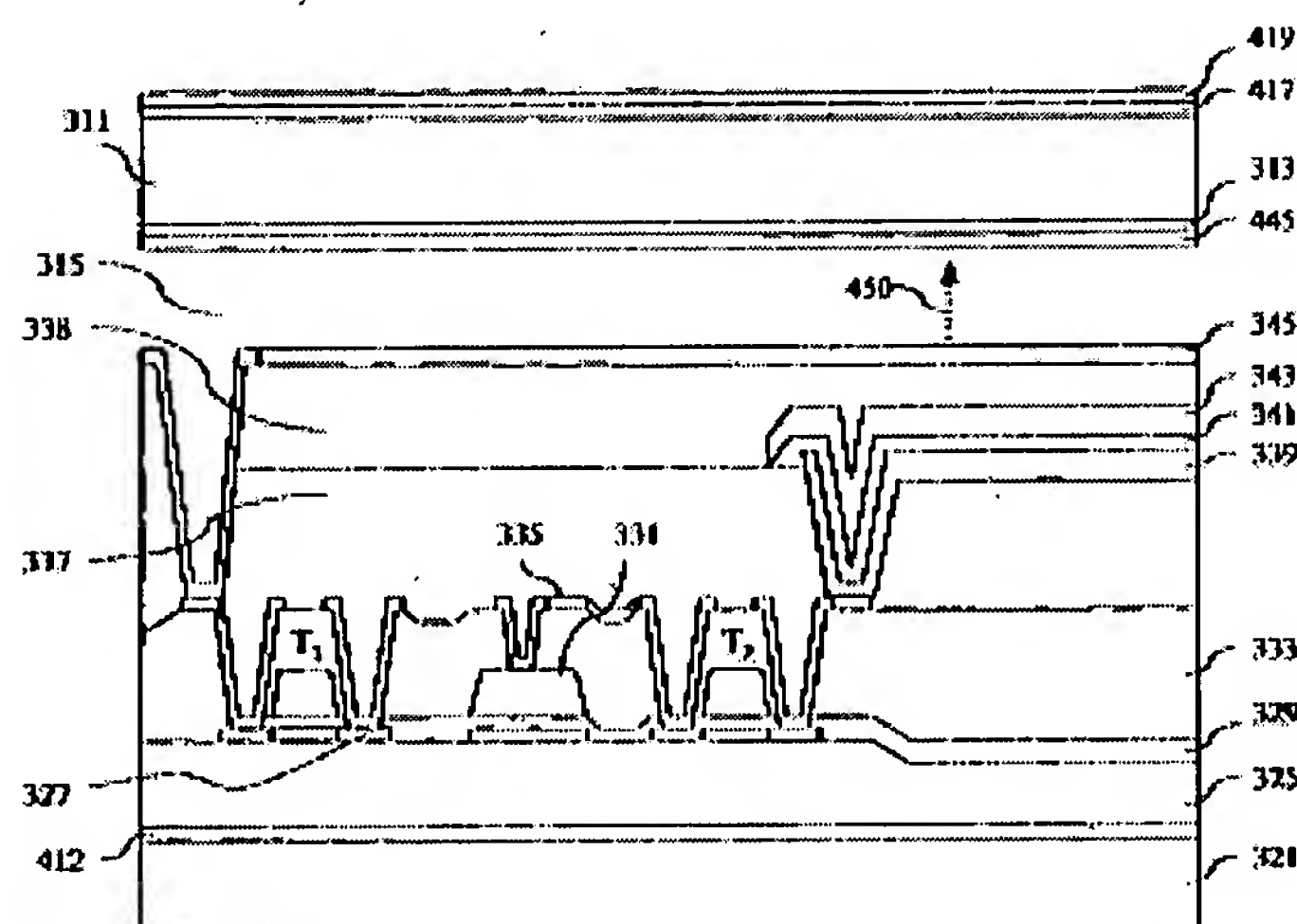


FIG. 4

Still lacking is the limitation such as the cathode being reflective.

Muruyama discloses a display device that includes a regional light emitting source (116) that includes a reflective cathode (113) on a lower substrate (101); a light-emitting layer (114) on the cathode; and a transparent anode (115) on the light emitting layer. Muruyama also discloses that using reflective cathode is advantageous since it

Art Unit: 2871

increases light emitting area and thus a display having high luminance and good visibility can be obtained (Fig. 1; page 7, paragraph 0091, 0093).

Muruyama is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use a reflective cathode.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use a reflective cathode in the device of Wang to increase light emitting area and thus obtain a display having high luminance and good visibility, as per the teachings of Muruyama.

Accordingly, claims 1, 4 and 5 would have been obvious.

As to claims 2 and 3, Wang also shows in Fig. 4 that the upper substrate of the display device further includes:

- a substrate (311);
- a color-filtering array (313) on one surface of the substrate; and
- a first transparent electrode (445) on the surface of the color-filtering layer;
- a polarizer plate (419) and
- a quarter-wave plate (417) on a substrate surface just opposite the color-filtering array.

As to claim 6, it is clear from Fig. 4 of Wang that the electrode (345) is set up on a layer (338) (applicant's bumpy layer).

As to claims 7 and 8, it is also clear from the disclosure as well as Fig. 4 of Wang that the first thin film transistor (T3) and the electrode (345), the second thin film transistor (T2) and the regional light-emitting source are formed in a pixel region.

Allowable Subject Matter

6. Claims 9-12, 1-18 and 20 are allowed.

Response to Arguments

7. Applicant's arguments with respect to claims 1 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicant's argument that Wang fails to teach or suggest that the transparent electrode 345 and the transparent cathode/anode can be replaced by reflective material, it is respectfully pointed out to applicant that first of all the use of reflective layer (412) suggests to one of ordinary skill in the art that the display can be used in a reflective mode and further as explained in the rejection above that using a reflective electrode instead of a combination of a reflective layer and an electrode is also common and known. Further, as suggested by Muruyama using a reflective cathode is also advantageous. Therefore, since the disclosure of Wang does not teach away from using reflective electrode and reflective cathode and further there is a motivation (see the rejection above) for using reflective material for the electrode and the cathode, one of ordinary skill in the art would desire to modify the display device of Wang for advantages such as obtaining a device that is thin and lightweight as well as provides good luminance and high visibility.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

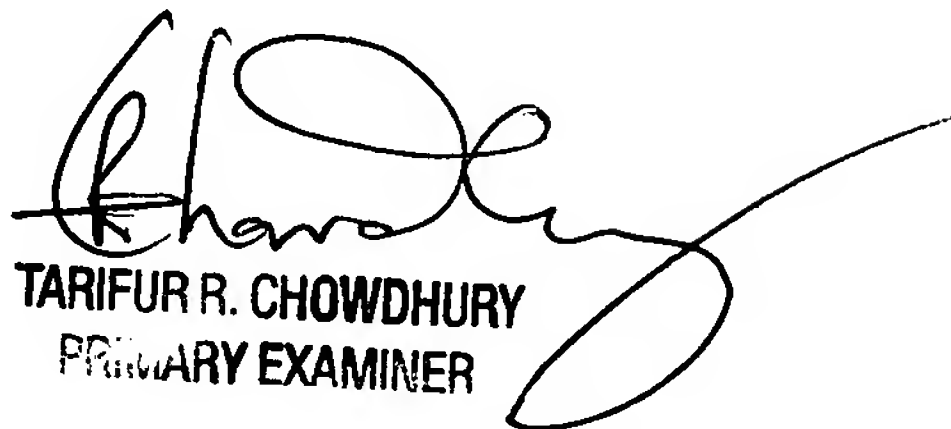
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tarifur R. Chowdhury whose telephone number is (571) 272-2287. The examiner can normally be reached on M-Th (6:30-5:00) Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2871

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TRC
November 01, 2005



TARIFUR R. CHOWDHURY
PRIMARY EXAMINER